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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,809	01/18/2000	Julio J. Santos-Munne	4204.3-US	1128

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EXAMINER

EDWARDS, PATRICK L

ART UNIT PAPER NUMBER

2621

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/484,809	SANTOS-MUNNE ET AL	
	Examiner	Art Unit	
	Patrick L Edwards	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The response received on October 29, 2004 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2. The applicant's arguments, filed on October 29, 2004, have been fully considered. A response to these arguments is provided below.

Specification Objections

Summary of Argument: The disclosure was objected to in the prior office action because the description of figure 6 in the brief description of drawings is actually the description of figure 7, and the description of figure 7 is actually the description of figure 6. Applicant has neither amended the specification nor traversed the objection.

Examiner's Response: The objection is maintained.

37 CFR 1.75 Claim Objections

Summary of Argument: Applicant has amended the claims to overcome the claim objections set forth in the previous office action.

Examiner's Response: The previous claim objections are withdrawn.

35 USC 112, First Paragraph Rejections

Summary of Argument: In the previous office action, claims 27-34 were rejected under 35 USC § 112(1) for failing to comply with the written description requirement. Specifically, the last paragraph of claim 27 contained subject matter which was not sufficiently described in the specification. Applicant has amended the claim by deleting this final paragraph.

Examiner's Response: This rejection is hereby withdrawn.

Prior Art Rejections

Summary of Argument: In the previous office action, claims 27-29 and 31-34 were rejected under 35 USC § 102(b) as being anticipated by Peshkin et al. (USPN 5,799,055). Applicant traverses this rejection, and argues that the Peshkin reference fails to disclose, teach, or suggest all of the limitations in independent claim 27. Specifically, applicant argues that Peshkin does not disclose, teach, or suggest "adjusting the virtual surgical object such that graphical representations of the virtual surgical object fit the anatomical area of interest (applicant's emphasis) shown in at least one of said first and second images" (see remarks pg. 4). Applicant admits that the Peshkin

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reference discloses changing the length of a virtual guidewire, but argues that it does not teach fitting it to an anatomic feature of interest.

Examiner's Response: Applicant's arguments have been fully considered, but are not persuasive. The applicant asserts that changing the length of a virtual guidewire (i.e. a virtual surgical object) disclosed in Peshkin does not qualify as 'fitting the object to the anatomical feature of interest' as recited in the claim. The examiner disagrees. As was stated in the previous office action, Peshkin discloses changing the length of the virtual guidewire (col. 5 lines 60-62). Peshkin further discloses that the length of the virtual guidewire is changed according to screw length (col. 14 lines 60-63). This screw length is determined by a software measurement of an anatomic distance (col. 4 lines 12-18: The reference describes the determination of an 'in-situ length'. This is a distance measurement which is taken 'on site', or in this case, on the anatomical feature of interest). To clarify, Peshkin discloses a software method which determines a distance measurement of the anatomical feature of interest. This measurement is then used to select a screw length. The length of the virtual guidewire is then adjusted according to the length of the screw. Thus, it is clear that the Peshkin reference 'fits' the virtual object to the anatomical feature.

Applicant is also reminded that the claims are to be given their broadest reasonable interpretation in light of the supporting disclosure (MPEP 2106). The explanation in the above paragraph shows how the Peshkin reference meets the claimed limitations even when the word 'fit' is interpreted narrowly. The examiner asserts that there are several other aspects of the Peshkin disclosure that anticipate the claimed limitation when given its broadest reasonable interpretation. For instance, the updating of the angle and orientation of the virtual guidewire would also qualify as 'fitting' the object to the anatomical feature of interest. Indeed, it is difficult to see how any adjustment of the virtual guidewire which is in accordance with the image area or the fiducials that comprise the image area would fail to meet this limitation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 27-29 and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Peshkin et al. (U.S. Patent No. 5,799,055 A).

As applied to claim 27, Peshkin et al. discloses a computer-assisted method for determining a dimension of an anatomical feature, the method comprising: displaying a first fluoroscopic image taken of an anatomical feature of interest from a first angle (see Figs. 1, 3a, and column 5, lines 14-29: The reference describes using a fluoroscope to take an image of a patient's body and then displaying the image on graphics monitor 48 (i.e. displaying a first fluoroscopic image taken of an anatomical feature of interest from a first angle).) and a second fluoroscopic image

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of the anatomical feature of interest taken from a second angle (see Figs. 1, 3b, and column 5, lines 30-32: The reference discloses obtaining a second image of the patient's body from a different angle and displaying it on graphics display 50 from an angle different from the first image.), the first and second images being registered with respect to a common three-dimensional coordinate system (see column 5, lines 24-29 and lines 35-42: The reference describes registering each of the images to the three-dimensional coordinates of the fiducials in the image.); defining at a known position and orientation in the three-dimensional coordinate system, within the area of interest of the patient, a virtual surgical object, the surgical object having one or more dimensions (see column 5, lines 46-49: The reference describes receiving a user's input to select the position, length, and angles (i.e. defining in the three-dimensional coordinate system) of a virtual guidewire (i.e. an object). The user input of the position, length, and angles corresponds to receiving indications of the position of the object with respect to the first and second fluoroscopic images.); displaying in the first and second fluoroscopic images graphical representation of the virtual surgical object projected into the first and second fluoroscopic images (see column 5, lines 49-54: The reference describes drawing a segment that represents the virtual guidewire (i.e. a graphical representation of the object) and that the projected virtual guidewire corresponds geometrically to the same three-dimensional segment in space.); and adjusting the virtual surgical object such that graphical representations of the virtual surgical object fit the anatomical area of interest shown in at least one of said first and second images (see column 5, lines 60-61: The reference describes that the user can change the length (i.e. adjust the dimension) of the virtual guidewire (i.e. the object).).

As applied to claim 28, Peshkin et al. discloses selecting an implant or surgical device for insertion into said patient based at least in part on said determined dimension of the anatomical feature (see column 3, lines 14-22: The reference describes that the process can be used to select a screw based on the information obtained in the image.).

As applied to claim 29, Peshkin et al. discloses that the surgical object comprises a three-dimensional object (see column 3, lines 14-22: The reference describes that the surgical object can be a screw or biopsy needle both of which are three-dimensional objects.).

As applied to claim 31, which is representative of claims 33 and 34, Peshkin et al. discloses that the adjusting step comprises adjusting a dimension of the virtual surgical object to fit the anatomical feature of interest shown in at least one of said first and second images (see column 6, lines 5-8: The reference describes adjusting the coordinates and orientation (i.e. adjusting the dimensions) of the virtual guidewire (i.e. the virtual surgical object) to correspond to an entry point (i.e. fit the anatomical feature of interest).).

As applied to claim 32, Peshkin et al. discloses that adjusting a dimension of the virtual surgical object includes adjusting the virtual surgical object's shape (see column 5, lines 60-61: The reference describes that the user can change the length (i.e. adjust the dimension) of the virtual guidewire (i.e. the object). If the length of the virtual guidewire is changed then the shape is also changed.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Peshkin et al. (U.S. Patent No. 5,799,055 A) and Alt (U.S. Patent No. 6,159,142 A). The arguments as to the relevance of Peshkin et al. in the rejection of claims 27 and 28 above are incorporated herein.

Claim 30 calls for the object to represent a stent. A stent is absent from Peshkin et al. but is clearly shown in Alt (see column 1, lines 57-64: The describes a process of implanting a stent under fluoroscopic observation).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Peshkin et al. by adding the stent of Alt because the use of fluoroscopic imaging when implanting stents is widespread. Therefore, a method for planning this surgery through the use of fluoroscopic images and virtual stents is very important for increasing the safety and reliability of such procedures.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

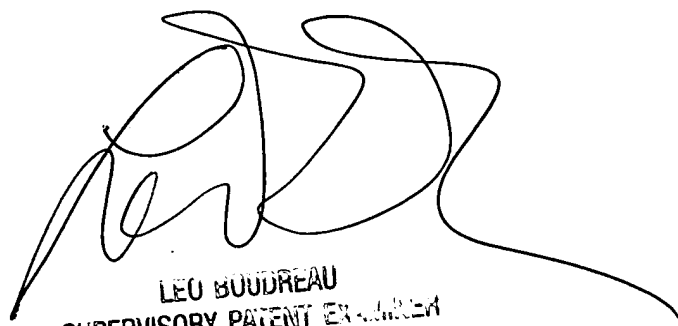
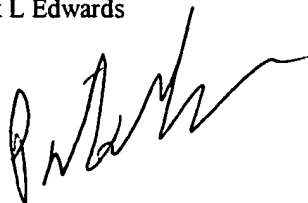
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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